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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,746	03/07/2002	Robert D. Feldman	FELDMAN 11-1-1-2-8	2870

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EXAMINER
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WANG, QUAN ZHEN

ART UNIT	PAPER NUMBER
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2613

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/092,746

Applicant(s)

FELDMAN ET AL.

Examiner

Quan-Zhen Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-10,12-14,16 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-10,12-14,16 and 18-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-10, and 12-14, 16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maddocks et al. (U.S. Patent US 6,483,616 B1) in view of Rowley et al. (U.S. Patent US 4,833,668).
3. Regarding claims 1 and 10, Maddocks teaches a method, comprising: reducing the power level of an optical data signal (the drawing, signal from amplifier 8) propagating in the optical fiber path (column 3, lines 44-49. When only one fiber is used for the system, the counter-propagating supervisory channel is propagating in "the optical fiber path".) in response to a loss of a counter-propagating supervisory signal (the drawing, supervisory signal generated from supervisory insert 16) in another optical fiber path (the drawing, fiber 6); reducing counter-propagating optical power (the drawing, data signal from amplifier 15) in response to a loss of the optical data signal (the drawing, the loss of data signal from amplifier 8; column 2, lines 63-67 and column 3, lines 1-15). Maddocks differs from the claimed invention in that Maddocks does not specifically disclose responsive to the loss of the optical data signal, reducing counter-propagating optical signal power output from at least one additional network element.

However, reducing counter-propagating optical signal power output from at least one additional network element (the drawing, amplifier 18) in response to the loss of the optical data signal is simply repeating the process of for reducing the optical power from amplifiers 11 and 15. It would have been obvious to one having ordinary skill in the art at the time the invention was made to reduce the counter-propagating optical signal power output from at least one additional network element (the drawing, amplifier 18) in response to the loss of the optical data signal, as it is done for amplifiers 11 and 15, in order to permit personnel to effect repairs safely. Maddocks differs from the claimed invention in that Maddocks does not specifically disclose that the counter-propagating optical supervisory signal is propagating in the same optical fiber as the optical data signal. However, it is well known in the art to counter-propagate optical supervisory signal in a same optical fiber in which the optical data signal propagates. For example, Rowley discloses to counter-propagate optical supervisory signal in a same optical fiber in which the optical data signal propagates (fig. 2. Note that the supervisory channel detected by detector 16 is "counter-propagating" with respect the signal transmitted by transmitter 14. Similarly, the supervisory channel detected by detector 16' is "counter-propagating" with respect the signal transmitted by transmitter 14'). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to configure the system of Maddocks to counter-propagate a supervisory signal in the upstream optical fiber, as it is taught by Rowley, in order to quickly detect the fault if there is a fiber break.

Regarding claims 3 and 12, Maddocks further teaches that the step of reducing the power level of the optical data signal and the step of reducing counter-propagating optical power are performed substantially at the same time (column 2, lines 63-67 and column 3, lines 1-12).

Regarding claims 4, the method of Maddocks inherently comprises reducing pump power supplied by at least one pump source (the light signal generated by amplifier 8) coupled to the optical transmission line (the drawing, optical fiber 7).

Regarding claims 5 and 13-14, the method of Maddocks inherently comprises reducing counter-propagating pump power supplied by at least one pump source coupled to the optical transmission line (column 2, line 67 and column 3, lines 1-12).

Regarding claims 6-7, Maddocks further teaches that the power level of the optical data signal is reduced by a predetermined amount such that harm from an optical signal emanating from a fault in the optical transmission line is substantially reduced (column 3, lines 13-17).

Regarding claims 8-9, Maddocks further teaches that the method further comprising the step of restoring the power level of the optical data signal in response to the presence or a notification of the presence of the counter-propagating supervisory signal (column 3, lines 49-58).

Regarding claims 16 and 20, Maddocks teaches a network element adapted for use in an optical transmission system, comprising: a first gain element (fig. 1, amplifier 8), for providing an upstream optical signal to an optical transmission line (fig. 1, optical fiber 5); and a controller (fig. 1, laser control 21), for reducing the power level of the

upstream optical signal generated by the first gain element in response to the absence of a counter-propagating supervisory signal (fig. 1, supervisory signal in fiber 6); a second gain element (fig. 1, amplifier 18), for providing a counter-propagating downstream optical signal (fig. 1, signal in fiber 6) to an downstream optical fiber path; the controller, for reducing the power level of the counter-propagating downstream optical signal generated by the second gain element to the downstream optical fiber path in response to the loss of an optical signal propagating in the downstream optical fiber path (column 2, line 57 to column 3, line 42; The description is applicable to the laser control 21 when a fiber cut occurs in fiber 6); the controller, in response to the absence of the counter-propagating supervisory signal, provides an indication to a downstream network element (fig. 1, laser controller 21; column 2, line 57 to column 3, line 42) that the supervisory signal is absent. Maddocks differs from the claimed invention in that Maddocks does not specifically teach that the supervisory signal is counter-propagating in the upstream optical fiber path. However, it is well known in the art to counter-propagate a supervisory signal in the same fiber path for the signal. For example, Rowley discloses counter-propagating a supervisory signal in the same fiber path (fig. 2, supervisory from second station to first station and detected at first station by supervisory and error detector circuit 16) and carrying out normal fault checks (column 5, lines 27-36) using the supervisory signal. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to configure the system of Maddocks to counter-propagate a supervisory signal in the

upstream optical fiber, as it is taught by Rowley, in order to quickly detect the fault if there is a fiber break.

Regarding claim 18, Maddocks further teaches that the network element comprises a repeater (column 2, lines 14-33).

Regarding claim 19, the gain element (fig. 1, amplifier 8 or 18) inherently comprises at least one of an optical amplifier and a pump source.

### ***Response to Arguments***

4. Applicant's arguments on claims 16 and 18-20 have been fully considered but they are not persuasive.

Applicant argues that "Maddocks does not teach a 'counter-propagating supervisory signal', but a co-propagating supervisory channel". Examiner respectfully disagrees. Whether an optical supervisory signal is "co-propagating" or "counter-propagating" depends the propagation directions of the optical data signal under consideration. An optical supervisory signal is "counter-propagating" if the optical data signal under consideration propagates in the opposite direction. As it is shown in fig. 1, Maddocks discloses that the supervisory channel is propagating in both counter-propagating and co-propagating directions. Maddocks further discloses reducing the power level of an optical data signal (the drawing, signal from amplifier 8) propagating in the optical fiber path (column 3, lines 44-49. When only one fiber is used for the system, the counter-propagating supervisory channel is propagating in "the optical fiber path".) in response to a loss of a counter-propagating supervisory signal (the drawing,

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supervisory signal generated from supervisory insert 16) in another optical fiber path (the drawing, fiber 6); reducing counter-propagating optical power (the drawing, data signal from amplifier 15) in response to a loss of the optical data signal (the drawing, the loss of data signal from amplifier 8; column 2, lines 63-67 and column 3, lines 1-15). As it is clearly stated in the above rejections, Maddocks differs from the claimed invention in that Maddocks does not specifically disclose that the counter-propagating optical supervisory signal is propagating in the same optical fiber as the optical data signal. However, it is well known in the art to counter-propagate optical supervisory signal in a same optical fiber in which the optical data signal propagates. For example, Rowley discloses to counter-propagate optical supervisory signal in a same optical fiber in which the optical data signal propagates (fig. 2. Note that the supervisory channel detected by detector 16 is "counter-propagating" with respect the signal transmitted by transmitter 14. Similarly, the supervisory channel detected by detector 16' is "counter-propagating" with respect the signal transmitted by transmitter 14'). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to configure the system of Maddocks to counter-propagate a supervisory signal in the upstream optical fiber, as it is taught by Rowley, in order to quickly detect the fault if there is a fiber break.

Applicant further argues that Rowley does not teach "counter-propagating supervisory signal". Examiner respectfully disagrees. It is clear that the supervisory channel detected by detector 16 is "counter-propagating" with respect the signal transmitted by transmitter 14. Similarly, the supervisory channel detected by detector



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16' is "counter-propagating" with respect the signal transmitted by transmitter 14'.

Therefore, Rowley clearly and undoubtedly show that it is obvious to one of ordinary skill in the art to counter-propagate optical supervisory signal in a same optical fiber in which the optical data signal propagates.

In view of the above discussion, the combination of the prior art references reads the claims and Examiner has clear established a prima facie case of obviousness.

Therefore, the rejections of the claims still stand.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoneyama (U.S. Patent US 5,535,037) discloses an optical repeater which transmits a response signal counter-propagating in the fiber path.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw

11/1/2007

  
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